Electromagnetic Properties of ^{85}Rb

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The decays of the $^{85}Kr^{m}$, $^{85}Kr^{g}$, $^{85}Sr^{m}$ and $^{85}Sr^{g}$ nuclei are investigated using singles Ge(Li) spectroscopy and intrinsic Ge Compton compression spectroscopy. A qualitative pattern of low-lying negative-parity states consists of a triplet $5/2^-_1$, $3/2^-_1$, $1/2^-_1$ and a quadruplet $3/2^-_2$, $7/2^-_1$, $1/2^-_2$, $5/2^-_2$. The ^{85}Rb nucleus is described in the cluster-vibration model (CVM) by coupling three holes in the Z=28-40 subshell to the quadrupole vibration. These wave functions are used to calculate the electromagnetic properties. Table 1 gives a comparison of the calculated results and the experimental data.

Branching ratios		
	Exp.	Theor.
$1^-_1 \rightarrow 5^-_1$	0.004(2)	0.005
$\rightarrow 3^-_1$	1.5(4)	1.5
$7^-_1 \rightarrow 5^-_1$	0.125(5)	0.125
$\rightarrow 3^-_1$	0.0032(3)	0.004

	Exp.	Theor.	τ(ps) L	Exp.	Theor.	B(E2)(e^2b^2)	Exp.	Theor.
$Q(5^-_1)$	+0.27	+0.10	3^-_1	1000	500	$3^-_1 \rightarrow 5^-_1$	0.0053(6)	0.0038
$\mu(5^-_1)$	+1.35	+1.26	1^-_1	27	18	$1^-_1 \rightarrow 5^-_1$	0.0048(6)	0.0061
			3^-_2	4	2	$3^-_2 \rightarrow 5^-_1$	0.0151(5)	0.0156
			7^-_1	4	8	$7^-_1 \rightarrow 5^-_1$	0.027(3)	0.0136